

Specific features of local data erasure and laser cooling in van vleck paramagnetics

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Abstract

Nonequilibrium population of hyperfine sublevels of the ground electronic state of rare-earth ions is theoretically investigated for Van Vleck paramagnetic crystals subject to optical excitation with laser pulses. We discuss the possibility of using the predicted specific features of the phenomenon under study for the development of methods for the laser cooling of the nuclear spin system and methods of local data erasure in the regime of long-lived photon echo. Copyright © 1997 by MAHK Hayka/Interperiodica Publishing.
